

WHAT IS CLAIMED IS:

1. A method of making a preform, comprising:
providing reinforcing material;
providing binder material;
5 mixing the reinforcing material and the binder material so that the binder material adheres to the reinforcing material;
applying a stream of the mixture to a support surface thereby adhering the mixture to the support surface; and
solidifying the mixture to form the preform.
- 10 2. The method of claim 1, wherein the step of applying a stream of the mixture to the support surface occurs in the absence of forced air at the support surface.
3. The method of claim 1, wherein the step of applying a stream of the mixture to the support surface occurs without use of a plenum system.
4. The method of claim 1, wherein the step of applying a stream of the mixture includes spraying the mixture against the support surface.
- 15 5. The method of claim 1, wherein the step of providing the reinforcing material includes providing chopped fibers.
6. The method of claim 5, wherein the step of providing the chopped fibers includes providing chopped fiberglass.
- 20 7. The method of claim 1, wherein the step of providing the reinforcing material includes emitting a stream of chopped fibers.
8. The method of claim 1, wherein the step of providing binder includes emitting a stream of binder particulate.
9. The method of claim 1, wherein the step of providing binder includes conditioning the
25 binder before mixing the binder with the reinforcing material.
10. The method of claim 9, wherein conditioning the binder includes heating the binder.
11. The method of claim 1, wherein the step of mixing the reinforcing material and the binder includes emitting a stream of reinforcing material and emitting a stream of binder and mixing the streams.
- 30 12. The method of claim 11, wherein emitting the streams of reinforcing material and binder includes emitting a plurality of streams wherein the streams are layered together.

13. The method of claim 11, further comprising conditioning the binder prior to emitting the stream of binder.
14. The method of claim 13, wherein conditioning includes heating the binder.
15. The method of claim 11, wherein mixing the reinforcing material and the binder includes
5 applying heat.
16. The method of claim 15, wherein the reinforcing material and the binder are combined before applying the heat.
17. The method of claim 15, wherein the reinforcing material and the binder are combined while the heat is applied.
- 10 18. The method of claim 15, wherein applying heat includes creating a flame.
19. The method of claim 15, wherein applying heat includes forming a controlled heat zone and feeding the reinforcing material and binder into the heat zone.
20. The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a vertical support surface.
- 15 21. The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a solid support surface.
22. The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a surface having ambient air conditions.
- 20 23. The method of claim 1, wherein the step of applying the mixture to a support surface includes applying the mixture to a surface having apertures therein.
24. The method of claim 1, further comprising shaping the mixture after application to the support surface and prior to solidifying.
25. The method of claim 1, wherein the step of solidifying the mixture includes cooling the mixture so that it conforms to the shape of the support surface.
- 25 26. The method of claim 1, further comprising applying a moldable material to the preform to form a composite and curing the composite to form a part.
27. The method of claim 26, further comprising applying a vacuum to the composite before the part is cured.
28. The method of claim 1, further comprising applying at least one of heat and pressure to
30 the preform to form a molded part.

29. The method of claim 28, further comprising adding resin to the preform prior to applying at least one of heat and pressure to the preform.
30. A preform formed in accordance with the method of claim 1.
31. A method of making a preform for use in forming a structural part, comprising:
- 5 providing a stream of fibrous reinforcing material;
- adhering particulate binder material to the reinforcing material by providing a stream of heated binder material to the stream of fibrous reinforcing material to form an adhesive mixture; and
- 10 spraying the adhesive mixture of the reinforcing material and the binder material against a support surface such that the mixture adheres to the support surface and solidifies into the preform.
32. The method of claim 31, wherein spraying occurs without forced air adjacent to the support surface.
33. The method of claim 31, wherein spraying occurs in the absence of a plenum system.
- 15 34. The method of claim 31, wherein adhering binder material to the reinforcing material includes conditioning the binder material with heat and forcing the conditioned binder material into the stream of reinforcing material.
35. The method of claim 31, wherein adhering binder material to the reinforcing material includes creating a heat zone and feeding the reinforcing material and the binder into the heat zone.
- 20 36. The method of claim 31, wherein adhering binder material to the reinforcing material includes layering streams of reinforcing material with streams of binder material in the presence of a flame.
37. The method of claim 31, wherein providing a stream of fibrous material includes blowing
- 25 chopped fiberglass.
38. The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto a vertical support surface.
39. The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto a solid surface.
- 30 40. The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto a perforated surface.

41. The method of claim 31, wherein spraying the adhesive mixture includes spraying the mixture onto the support surface under ambient air conditions.
 42. A preform formed in accordance with the method of claim 31.
 43. A composite structure molded on the preform formed in accordance with the method of
- 5 claim 31.

1003874 01802